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Steven C. Salop
Georgetown University Law Center, salop@law.georgetown.edu

Daniel P. O'Brien
Federal Trade Commission

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Steven C. Salop
Professor of Law
Georgetown University Law Center
salop@law.georgetown.edu

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THE COMPETITIVE EFFECTS OF PASSIVE MINORITY EQUITY INTERESTS: REPLY

DANIEL P. O'BRIEN
STEVEN C. SALOP*

I. INTRODUCTION

In a recent article published in this *Journal,* Jon Dubrow examines the acquisitions of passive minority equity interests.[1] The focus of his article is the treatment of these transactions by the courts and the federal antitrust agencies, including their treatment of the investment-only exemption from Section 7 of the Clayton Act. One section of the article discusses the economic foundation for the competitive effects analysis of these acquisitions, focusing mainly on our article recently published in this *Journal.*[2] Dubrow accepts the basic economic framework set out in our earlier article, and the analysis of factors that affect the acquiring firm's control or influence over the target.

However, Dubrow is highly critical of our treatment of the financial interest of the acquiring firm and particularly the partial ownership scenario that we refer to as "silent financial interest." He argues that our

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* Daniel O'Brien is Deputy Director of the Bureau of Economics at the Federal Trade Commission. Steven Salop is Professor of Economics and Law at the Georgetown University Law Center and Senior Consultant to Charles River Associates. We would like to thank Debra Holt, Henry Huser, Serge Moresi, and John Woodbury for helpful conversations on these issues. The views expressed herein are those of the authors and do not purport to represent the views of the Federal Trade Commission or any Commissioner.

[1] Jon B. Dubrow, *Challenging the Economic Incentives Analysis of Competitive Effects in Acquisitions of Passive Minority Equity Interests,* 69 ANTITRUST L.J. 113 (2001).

[2] Daniel P. O'Brien & Steven C. Salop, *Competitive Effects of Partial Ownership: Financial Interest and Corporate Control,* 67 ANTITRUST L.J. 559 (2000). *See also* Robert J. Reynolds & Bruce R. Snapp, *The Competitive Effects of Partial Equity Interests and Joint Ventures,* 4 INT'L J. INDUS. ORG. 141 (June 1986); Timothy F. Bresnahan & Stephen C. Salop, *Quantifying the Competitive Effects of Production Joint Ventures,* 4 INT'L J. INDUS. ORG. 155 (June 1986); David A. Malueg, Collusive Behavior and Partial Ownership of Rivals, EAG 90-9 (U.S. Dep't of Justice Econ. Analysis Group Discussion Paper 1990); Joseph Farrell & Carl Shapiro, *Asset Ownership and Market Structure in Oligopoly,* 21 RAND J. ECON. 275, 287 (1990); A.E. Rodriguez, Some Antitrust Concerns of Partial Equity Acquisitions 15 (Bureau of Econ. FTC Working Paper No. 186, 1991); John E. Kwoka, Jr., *The Output and Profit Effects of Horizontal Joint Ventures,* 40 J. INDUS. ECON. 325–38 (Sept. 1992); Ian Gale, *Price Competition in Non Cooperative Joint Ventures,* 12 INT'L J. INDUS. ORG., Mar. 1994, at 53.

financial interest analysis ignores several important "real-world" complicating factors that significantly reduce or even eliminate the economic incentives of the acquiring firm to reduce its competitive intensity following the acquisition of a passive minority financial interest. In this reply, we respond to Dubrow's criticisms and present our view of how such complicating factors should be reckoned into the analysis.

II. OUR FRAMEWORK AND QUANTITATIVE METHODOLOGY

Our article starts from the premise that a partial ownership interest involves two distinct elements—financial interest and control/influence rights. The acquiring firm's financial interest entitles that firm to a share of the profits and value of the target firm. That financial interest affects the competitive incentives and decisions of the acquiring firm. The acquiring firm also may obtain the ability to influence or even control the target. These control/influence rights allow it to affect the competitive incentives and decisions of the acquired firm.

A partial ownership transaction that gives the acquiring firm a particular financial interest share may be accompanied by more or less control/influence rights. For example, a 49 percent financial interest gives considerable influence and control if the next-largest shareholder has a 5 percent interest, but much less (if any) control if another shareholder has a 51 percent interest. In addition, in modern corporate finance with multiple classes of stock and complex voting rules, the voting share does not necessarily equal the share of financial interest. Indeed, a shareholder could have substantial financial interest share but be relegated to a passive ownership position, with virtually no control/influence beyond what is given by corporate and securities laws.[3] Antitrust consent decrees also could reduce or eliminate the shareholder's influence.[4]

The residual rights provided by corporate and securities laws raise the question of whether most real-world partial ownership interests are or ever could be purely passive as a practical matter, absent a formal side-agreement or consent decree.[5] Absent a side-agreement, minority share-

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[3] Even these "default" rights may be altered by private contracts in some cases.

[4] For example, in the case of TCI's financial interest in Time Warner, an FTC consent decree eliminated TCI's ability to influence Time Warner's competitive decisions. *See* Time Warner, Inc., FTC Docket No. C-3709 (D.D.C. Feb. 3, 1997).

[5] For example, in the Northwest/Continental matter, Northwest placed its stock into a 6-year (and then a 10-year) voting trust in an attempt to satisfy Department of Justice concerns about its control over Continental. However, DOJ concluded that Northwest would retain important residual rights that would give it significant influence over Continental. *See* United States of America v. Northwest Airlines Corp., http://www.usdoj.gov/atr/cases.

holders sometimes have the right to bring stockholder mismanagement suits against the management of the target, suits that can be used to exert some influence over the target firm.[6]

If the minority shareholding is small, it might be thought that the incentive to bring such mismanagement suits would be small. This is because the plaintiff bears the full cost of the suit but only gets a fraction of the benefits. However, when the shareholder is a competitor, there is a powerful force in the other direction. If the acquiring firm can sue or threaten to sue to influence the target to compete less intensely, then a lower financial interest share means that the reduction in the target's profits is borne mainly by the other shareholders, while the acquiring firm gets the benefit of less intense competition. We discuss this latter "free rider" issue in detail in our "Total Control" scenario.[7] For this reason, the pure passivity inherent in our "silent financial interest" scenario may best be viewed as a limiting case, absent credible evidence regarding the inability or disincentive to bring mismanagement suits.

Our economic analysis of the incentive effects of passive minority financial interest follows the standard economic analysis of unilateral incentive effects.[8] If a firm acquires a purely passive financial interest in a competitor, with absolutely no control or influence, it will recognize that the target's incentives will remain the same as before the acquisition. However, in making its own competitive decisions about its price, output, and investment, it will take into account the impact of the financial interest on its own incentives. Instead of trying to maximize solely its own profits, it will try to maximize the sum of its own profits, plus the investment income earned from its financial interest in the target. That investment income equals, in the simplest case, the profits of the target times the acquired firm's financial interest share of the target. Formally, this can be written as

$$W = \Pi_A + B\,\Pi_T \qquad (1)$$

[6] A current example is LVMH's ongoing mismanagement lawsuit before the Dutch courts attacking Gucci's 1999 decision to form a strategic alliance with PPR. Gucci alleges that this strategic alliance has enabled it to pursue a more aggressive competitive strategy against LVMH and its other competitors. *See* LVMH Commences Legal Action Against Gucci Poison Pill Mechanism, LVMH Press Release, http://www.lvmh.com (Feb. 25, 1999); LVMH Legal Action Against Gucci and PPR and Warns Against Implementation of Strategic Investment Agreement, LVMH Press Release, http://www.lvmh.com (June 9, 1999); LVMH Moet Hennessy Louis Vuitton SA and others v. Gucci Group NV and others, Enterprise Chamber of the Amsterdam Court of Appeal, Case No. 167/990K.

[7] O'Brien & Salop, *supra* note 2, at 578.

[8] In economic language, "unilateral effects" refer to competitive effects that arise through the adjustment from one (non-collusive) equilibrium to another following a merger or partial acquisition.

where W represents the wealth of the acquiring firm, Π_A represents the profits of the acquiring firm, Π_T represents the profits of the target, and B represents the acquiring firm's financial interest share in the target.

When the acquiring firm takes its investment income into account, its competitive incentives will change. For example, in making its own pricing decision, it will recognize that an increase in its own price will lead some of its customers to substitute to purchasing from the target, increasing the sales and profits of the target. As a shareholder in the target, the acquiring firm is able to share in the resulting increased profits and/or capital gains on its stock ownership. This fact leads the acquiring firm to have an incentive to pull its competitive punches, relative to its incentives absent the acquisition. The magnitude of this effect on its incentives depends on the magnitude of the financial interest and the impact of this substitution on the profitability of the target firm. A complete competitive effects analysis of a partial ownership acquisition also would involve evaluation of easy of entry, efficiency benefits, and other competitive effects factors.

Our earlier article explains how to quantify this incentive effect, based on the type of data generally collected in the course of a Hart-Scott-Rodino premerger review. We explain how the basic HHI methodology can be applied and a modified HHI (MHHI) can be derived that takes the partial ownership interest into account. In the case of a passive (or "silent") financial interest, the MHHI "delta" equals the financial interest share (B) times the product of the firms' market shares. This may be compared to a full merger, where the MHHI "delta" equals twice the product of the firms' market shares.

To illustrate using Dubrow's numerical example, suppose that GM buys a 45 percent silent financial interest in Ford. Suppose that minivans constitute a relevant market and GM's and Ford's market shares are 20 percent each. In that case, a merger between GM and Ford would increase the HHI by 800 points (i.e., $2 \times 20 \times 20$). In contrast, GM's acquisition of the 45 percent passive financial interest would increase the MHHI by only 180 points (i.e., 45 percent $\times$ 20 $\times$ 20).

Our article also derives a second methodology, the Price Pressure Index (PPI). This methodology also relates to the analytic foundation of the Merger Guidelines's section on unilateral effects in differentiated products markets. In contrast to the MHHI, which is a market-wide index, there is a separate PPI for each of the merging firms. The PPIs depend on diversion ratios and margins earned by the firms, as well as the financial interest share.

We also briefly discuss how merger-specific efficiencies generated by the transaction can be incorporated into the PPI methodology, and how the PPI can be combined with a merger simulation model to derive what might be termed an Equilibrium Price Index (EPI) for each firm in the market.[9] The EPIs take into account all the feedback among market participants from the partial ownership interest and the merger-specific efficiencies.

III. THE CRITICISMS OF OUR FINANCIAL INTEREST ANALYSIS

Dubrow is highly critical of our financial interest analysis. He argues that we "presume a formulaic level of financial interest and economic incentives" that is "divorced from real-world factors." These complicating factors "could render the possibility of competitive harm unlikely." These complicating factors involve: (1) incomplete information by the managers of the acquiring firm, (2) the personal financial incentives of the managers of the acquiring firm, and (3) the inability of the acquiring firm to capture the benefits of its investment. According to Dubrow, these factors imply that one cannot simply presume that the acquiring firm will have the incentive to raise price. Instead, one must examine these "myriad factors . . . before one can presume that the investment in a competitor would, in fact, provide any meaningful incentive to increase prices or change other competitive behavior."[10]

These criticisms suggest that these real-world complicating factors significantly dampen or altogether eliminate the incentives of the acquiring firm to pull its competitive punches. Dubrow is particularly concerned about the situation where the financial interest is passive. This view in turn would imply that the agencies and courts should be much more permissive with respect to acquisitions of passive minority financial interests than would be implied by our quantitative methodology.

We disagree. In addition, as we will discuss below in more detail, a broad reading of these criticisms might been taken as essentially rejecting economic incentives analysis across the board. We doubt that Dubrow intends this broad interpretation. However, given the scope of these

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[9] There has been considerable work on oligopoly simulations of the price effects of mergers. For example, see Gregory J. Werden, *Simulating the Effects of Differentiated Products Mergers: A Practical Alternative to Structural Merger Policy*, 5 GEO. MASON L. REV. 363–86 (1997); and Luke Froeb & Gregory J. Werden, *Simulation the Effects of Mergers Among Noncooperative Oligopolists, in* COMPUTATIONAL ECONOMICS AND FINANCE: MODELING AND ANALYSIS WITH MATHEMATICA (Hal Varian ed., 1996).

[10] For the quotations in this paragraph, see Dubrow, *supra* note 1, at 131–32.

criticisms, we think that it is important to explain the flaws in this interpretation.

We also disagree with most of Dubrow's specific criticisms. We do not think that they identify issues that can usefully differentiate a case from the paradigm we set out. However, we are sympathetic to a variant of one of Dubrow's specific concerns, the one relating to the ability of the acquiring firm to capture the benefits of its investment. We agree that the inability to capture benefits can be a dampening influence in certain circumstances, though our analysis differs substantially from the specific scenario discussed by Dubrow. Dubrow focuses on market risk. We think that such a problem instead could arise from the acquiring firm's lack of control over the target's management, along with a lack of confidence in their investment possibilities or skills. The dampening effect is more likely when the financial interest is inherited or obtained for noncompetitive reasons, rather than when it is actively acquired.

In our view, this complicating factor at most may somewhat dampen the incentives of the managers of the acquiring firm to pull its competitive punches. However, it would not eliminate the incentives of the acquiring firm to soften its competitive decisions. We also disagree with the thrust and the scope of the other criticisms set out in Dubrow's article. Thus, we continue to conclude that the acquisition of passive minority financial interests can raise significant competitive concerns and that our analysis provides a valid framework for quantifying the extent of these concerns.

A. INCOMPLETE INFORMATION

Dubrow says that the most prevalent complicating real-world factor is incomplete information. In his view, and in contrast to models that assume executives have a "near omniscient view of the competitive dynamics," managers in the real world lack sufficient information "to modify with any degree of precision their own behavior based upon the effect that such a change is likely to have on the profitability of the rival in which they have invested."[11] The lack of information might involve an "overall lack of data" or an "unanticipated action" by another firm.[12] As a result of this incomplete information, the managers are unlikely to change their competitive decisions in response to obtaining a passive financial interest in a competitor.

Before getting to the application of these claims to the analysis of partial ownership interests, it is worth noting at the outset that these

[11] *Id.* at 133.

[12] *Id.*

incomplete information criticisms could be read as striking to the heart of the economic analysis used in antitrust and industrial organization more generally. Corporate managers clearly face incomplete information. Incomplete information is ubiquitous in the economy. It is also true that incomplete information affects the incentives and decisions of risk-averse individuals and firms.

Standard industrial organization economics clearly does not assume away this incomplete information. Instead, industrial organization economics is premised on the view that managers are able to operate actively and successfully in an environment characterized by incomplete information. The managers are assumed to gather information and make decisions efficiently to maximize expected profits, despite imperfect and costly information.[13] A rejection of the ability of managers to take into account and make decisions in response to a significant change in the corporation's investment portfolio thus represents an extreme (and, we think, unsupportable) view of imperfect information.

Accepting this sort of incomplete information criticism whole hog obviously would lead to a dramatic impact on the role of economics in antitrust. A reader might interpret Dubrow as saying that incomplete information essentially paralyzes managers to the point of leading them to forgo profitable investment opportunities and profitable conduct. This would be a severe managerial overreaction, of course. After all, the MBAs who manage modern corporations are trained to deal with incomplete information in their competitive decisions. For example, in setting price, managers must estimate the impact of the price increase on the firm's sales and profits. In carrying out this analysis, the impact of the price increase on rivals' pricing also is relevant and must be reckoned into the analysis. This analysis and these decisions involve incomplete information.

This point may be illustrated with Dubrow's example of General Motors purchasing a partial ownership interest in Ford. Suppose that

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[13] *See, e.g.*, JOSEPH E. STIGLITZ, PRINCIPLES OF MICROECONOMICS (1997); JEAN TIROLE, THE THEORY OF INDUSTRIAL ORGANIZATION (1988) (especially the chapter on the theory of the firm). Scherer and Ross summarize the rationale for assuming profit maximization as follows: "It appears that the profit maximization assumption at least provides a good first approximation in describing business behavior. Deviations, both intended and inadvertent, undoubtedly exist in abundance, but they are kept within more or less narrow bounds by competitive forces, the self-interest of stock-owning managers, and the threat of managerial displacement by important outside stockholders and takeovers." F.M. Scherer & David Ross, INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE 52 (3d ed. 1990). For a recent review of the role of decision theory in business and judicial decision making, see C. Frederick Becker, III & Steven C. Salop, *Decision Theory and Antitrust Rules*, 67 ANTITRUST L.J. 41 (1999).

GM raises its minivan price, expecting a fraction of the lost sales to be captured by Ford. According to Dubrow, that expectation might be disappointed if Daimler/Chrysler runs a simultaneous price promotion and captures all the diverted sales instead. Fearing this, Dubrow suggests that GM may forgo the price increase.

It surely is true that certain expectations could deter the GM price increase. However, a full analysis by GM's managers would take into account the likelihood of this promotional conduct by Daimler/Chrysler and whether or not GM's initial price increase would cause such a promotion. In particular, if the price promotion were expected to take place *whether or not* GM raises its price, then GM would have already accounted for its likely sales losses from that promotion in its planning, independent of the proposed price increase. In evaluating the profitability of its price increase, GM would want to estimate the *incremental* effect of its price increase on sales, not the *gross* loss that combines the price increase and a simultaneous (but independent) promotion. If GM establishes that the price increase will not *cause* the Daimler promotion, then the GM post-acquisition price increase would be less likely to be deterred.

In addition, GM obviously also would factor into its analysis other possible responses by Daimler/Chrysler, not just this one. In particular, industrial organization economics would suggest that if GM raised its price, there is also the possibility that Daimler/Chrysler might be *more likely* to raise its prices in response. Indeed, most economists would treat a price-increase response as far more likely than the opposite factual scenario assumed by Dubrow. Standard economic models of oligopoly with differentiated products have the property that a price increase by one firm tends to lead its rivals to increase their prices in response. Given this starting point, our PPI and MHHI estimates actually are conservative, in that they assume that competitors like Daimler/Chrysler do not raise their prices in response to the GM price increase.[14] Thus, taking this factor into account might well raise the level of competitive concern.

All in all, incomplete information is a fact of life for corporations and they deal with it in sophisticated ways. It would not eliminate the incentive to increase price or reduce output created by a passive minority financial interest.

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[14] These induced price increases and other feedbacks would be taken into account in full equilibrium simulation models that derive EPIs.

B. MANAGEMENT'S PERSONAL FINANCIAL INCENTIVES

Dubrow's second real-world complicating factor involves the personal financial incentives of managers. Dubrow observes that we assume a "common firm-wide incentive" that he believes is "likely not present in many industrial structures."[15] In Dubrow's view, corporate managers are compensated on the basis of the performance of the business they operate, not the overall profitability of the entire corporation. Thus, managers would not have the personal financial incentive to sacrifice the profits of their particular business by raising price, even if it increases the investment income of the firm by even more. Indeed, according to Dubrow, even the senior corporate managers and the board of directors would not be willing to sacrifice earnings in order to boost investment income by more.[16] This "agency" problem thus would mean that a silent financial interest would not lead the acquiring firm to raise its price or reduce its output or investment.

We recognize the general potential for agency costs. However, our framework properly assumes away this specific agency problem in the analysis of silent financial interest. We have two key reasons for this assumption.

First, antitrust generally assumes that corporate and securities laws, along with the market for corporate control, ensure that the senior managers and board of directors act generally in the interests of shareholders to maximize profits (i.e., the market valuation of the corporation). Thus, we assume that board and senior management take actions to incentivize lower-level managers to maximize corporate profits. This may involve monitoring their behavior directly. It also may involve the design of compensation structure. It is true that managers are compensated on the basis of the performance of their individual businesses. However, they also are compensated on the basis of corporate profits. Modern corporations increasingly use stock options to incentivize managers to act in the interests of the entire corporation. For example, we are confident that the corporate managers at GM make sure that Chevrolet and Pontiac prices are set in the interest of GM shareholders. To take a more extreme case, we do not think that the Chevrolet manager who engages in a comparative advertising campaign that points out the superiority of value-priced Chevrolets versus overpriced Cadillacs would be rewarded. Thus, we are comfortable with our general approach of

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[15] Dubrow, *supra* note 1, at 133.

[16] *Id.* at 133–34.

assuming away a broad critique based on the personal financial incentives of managers.

Second, the implications of this broad agency cost criticism go far beyond the analysis of partial ownership interests. We are confident that Dubrow is taking a narrow view of the implications of agency costs. However, readers might not. And, we think, a broad reading would lead to absurd results. For example, if one were to assume that managers were interested only in the profits of their specific business and totally ignored the implications for the corporation, then a merger among GM, Ford, Toyota, and Daimler/Chrysler would be permissible because it could be assumed that all the models would be priced independently by managers with a narrow focus. It similarly could not be presumed that merger plans were designed on average to increase efficiency.[17] Managerial aggrandizement would be the more likely presumption.[18] Indeed, in the extreme, it might no longer be presumed that horizontal price fixing increases prices to unreasonable levels. Instead, lazy managers simply may be trying to save the effort of setting prices independently. Or, perhaps the managers are engaged in an elaborate, altruistic potlatch ritual to benefit their customers by setting beneficial low prices.

Thus, although we accept the potential for certain agency problems in modern corporations, we are not prepared to say that managers are so narrowly focused and outside the control of the corporation itself to deter the type of anticompetitive conduct analyzed in our article.

C. INABILITY TO CAPTURE BENEFITS

Dubrow's third real-world complicating factor involves the inability of the acquiring firm to capture the benefits earned by the target firm from

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[17] This presumption is apparent in the Horizontal Merger Guidelines. For example: "the Agency seeks to avoid unnecessary interference with the larger universe of mergers that are either competitively beneficial or neutral." U.S. Department of Justice & Federal Trade Commission, Horizontal Merger Guidelines § 0.1 (1992), *reprinted in* 4 Trade Reg. Rep. (CCH) ¶ 13,104. "A merger is unlikely to create or enhance market power or to facilitate its exercise unless it significantly increases concentration and results in a concentrated market, properly defined and measured. Mergers that either do not significantly increase concentration or do not result in a concentrated market ordinarily require no further analysis." *Id.* § 1.0.

[18] Conversely, it could no longer be presumed that a horizontal merger between large firms in a highly concentrated industry would raise competitive concerns if the combined operation maintained separate business units run by different managers. The argument would be that the agency problem is so severe that it would not be possible for the owners to design incentive contracts that induce managers to maximize the profits of the firm. Of course, this is tantamount to rejecting a role for antitrust in analyzing the effects of horizontal mergers.

conduct by the acquiring firm to pull its competitive punches.[19] Although we disagree with Dubrow's formulation of the specific situations in which this inability likely affects incentives, we do agree that this problem can affect incentives in a different scenario. In the next section, we discuss our formulation and resolution of this problem.

Dubrow raises this problem in the context of the market risk inherent in a partial financial interest arrangement. For example, in the case of multi-product firms, if the competitive overlap involves only a small fraction of the target's entire business, Dubrow cautions that any benefits from the financial interest may be swamped by the effects of other businesses on the overall profitability of the target firm. The return on the acquiring firm's investment also is affected by the aggregate stock market risk.

Dubrow observes that we assume that the acquiring firm shares in the profits of the target firm. Yet, for public companies that do not pay out earnings in the form of dividends, there is no direct and immediate profit sharing. Instead, the acquiring firm would obtain a capital gain based on the increased value of the acquired firm, a capital gain that can only be realized in the future when the financial interest is liquidated. At that time, the capital gain may have disappeared from a variety of other shocks to the company or the economy. Thus, a company would not sacrifice its profits for a potential capital gain in the other company.

We think that this criticism is highly overstated. As a general matter, whether the return to the acquiring firm is in the form of dividends or capital gains flowing from retained earnings, both increase the value of the acquired firm. Indeed, retained earnings and capital gains are tax advantaged, so that they should lead to a larger increase in the valuation of the acquiring firm. In fact, if the acquiring firm does not pay out its profits either, then a price increase would increase the value of the investment in the target firm while decreasing the stand-alone value of the division of the acquiring firm. Thus, there is market risk either way. The shareholders would care about the overall value of their investment, which would incorporate (and aggregate) both effects.

Nor would some sort of "swamping" or stock market risk issues destroy the incentives of the acquiring firm to take actions that increase the profitability of the target. It is true that the target firm's profits are subject to variation because of other businesses or market risk. However, if the acquiring firm pulls its competitive punches, the statistical expectation of the target's profits will improve. This higher expectation in turn

[19] Dubrow, *supra* note 1, at 134–36.

will be reflected in a higher expected stock market valuation or higher dividends on average.

Variance in the target's profitability does reduce its stock market valuation, *ceteris paribus*. However, this reduction is independent of the acquiring firm's financial interest. This reduction occurs in the absence of the financial interest and before the acquisition is made. As a result, that stock market risk already would be reflected in a lower purchase price for the acquired financial interest. The market risk thus will not provide a general deterrent to the acquiring firm raising its price, contrary to Dubrow's assumption.

IV. LACK OF CONTROL OVER THE TARGET'S PROFITS AND INVESTMENTS

We disagree with the specifics of Dubrow's formulation of why the acquiring firm would be unable to recapture the benefits achieved by the target. However, we agree that a benefits-recapture problem may arise in certain other circumstances. This does not involve market risk at all. Instead, it arises because an acquiring firm with a purely passive financial interest by definition cannot control or influence the way in which the target uses the extra profits generated by the actions of the acquiring firm.

When the acquiring firm raises its price after acquiring a passive financial interest, it trades its own profits for presumably larger returns earned from its investment in the target. However, this trade also involves reducing the profits that it controls for profits controlled by the senior managers of the target. This raises the risk that the managers of the target may not direct these earnings to their highest value uses, whether that involves paying them out as dividends or investing them in high rate of return businesses. In particular, the senior management of the acquiring firm may feel that they are more skillful investors, who would earn a higher rate of return than would the managers of the target. The acquiring firm may have high return investment prospects that they cannot afford to fund or they may feel that the managers of the target have a defective investment or business plan.[20] To state this in the extreme, they may fear that the target's incremental profits will be squandered in corporate jets and excessive salaries.

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[20] In this regard, modern finance theory recognizes that even well functioning capital markets face moral hazard and adverse selection problems that limit the ability of firms to borrow. *See, e.g.*, Joseph E. Stiglitz & Andrew Weiss, *Credit Rationing in Markets with Imperfect Information*, 71 AM. ECON. REV. 393–410 (1981).

Under these circumstances, the acquiring firm may be willing to sacrifice some nominal earnings in order to maintain greater control over a higher fraction of those earnings. Thus, the acquiring firm would be reluctant to soften its competitive conduct to benefit the target, unless the increased investment income is large enough to overcome the risk from loss of control. This can be a valid business concern in a partial ownership transaction, in particular, when the financial interest is not actively acquired.

In fact, a variant of this issue arose in the Time Warner acquisition of Turner Broadcasting.[21] As part of that merger transaction, Time Warner acquired TCI's 23 percent ownership interest in Turner. In exchange, Time Warner gave TCI a small financial interest (approximately 7–9 percent, depending on the base used) in Time Warner. This exchange of shares was not actively acquired by TCI. Instead, TCI only accepted the exchange because that plan made the transaction tax-free.

Whereas TCI had significant influence in Turner, including board representation, its financial interest in Time Warner was to be totally passive in order to satisfy the potential objections of the Federal Trade Commission. Under these circumstances, the TCI senior managers indicated that they would not have an incentive to sacrifice TCI profits to increase the profits of Time Warner. Whereas the TCI senior management could control the disposition of the TCI profits, they would have no influence over the use of the Time Warner profits. Because Time Warner had a poor investment record at the time relative to TCI, the claim that TCI could not easily capture the benefits of its investment had some credibility. In addition, this was not a situation in which TCI initiated a partial ownership acquisition of Time Warner. Instead, they received the financial interest when Turner was sold to Time Warner.

These considerations can be easily reckoned into our analysis. If the managers of the acquiring firm are more skillful investors than the target, then the acquiring firm would only be willing to raise its price if its nominal share of the increased profits earned by the target *significantly* exceed the profits that it sacrifices. Stated in terms of the profitability formula above, the acquiring firm would "discount" the increased profits earned by the target by a "discount rate" to reflect its inability to control the disposition of these profits. Formally, the acquired firm's perceived wealth could be rewritten as follows,

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[21] Stanley M. Besen et al., *Vertical and Horizontal Ownership in Cable TV: Time-Warner-Turner, in* THE ANTITRUST REVOLUTION 452–75 (John Kwoka Jr. & Lawrence J. White eds., 3d ed. 1999).

$$(2) \qquad W = \Pi_A + (1 - \delta) B \Pi_T$$

where δ represents the minority passive ownership discount rate.

Applying this discount rate does not eliminate the incentives of the acquiring firm to raise its price in order to increase the profits of the acquired firm. However, it does dampen its incentives to some degree. As indicated by the equation, the "discount rate" would have the same effect as a comparable reduction in the acquiring firm's financial interest.

This raises the question of the specific discount rate to apply in calculating the MHHI or PPIs. The appropriate discount rate should reflect the reduction in value from not having control or influence over the earnings. A rough estimate of the appropriate discount rate could be obtained from market data on the magnitude of the control premium in equity acquisitions. These estimates of the price premium of voting over nonvoting stock in public companies fall in the 4–7 percent range, though this figure does not control for the magnitude of the financial interest. [22] Minority ownership discounts for tax purposes permitted by the Internal Revenue Service are another possible data source, although these discounts do not necessarily reflect equilibrium rates determined in any real market.[23] The appropriate discount rate is not a settled issue.

To illustrate the impact of this discount rate on the MHHI calculations, return to the minivan example set out earlier. In that case, GM's acquisition of a 45 percent passive interest led to an increase of 180 points in the MHHI. Suppose that a 20 percent discount rate were applied to account for the fact that GM could not influence Ford's disposition of the higher profits and the fact that Ford had a poor investment record. In that case, the MHHI delta now would be 144 points (i.e., 80 percent $\times$ 180). With that discount rate, the transaction would still raise concerns under the market concentration standards set out in the Merger Guidelines.[24]

V. CONCLUSIONS

Although we disagree with most of Dubrow's criticisms of the impact of incomplete information on incentives, we do accept an effect based

[22] *See* Michael C. Jensen & Richard S. Ruback, *The Market for Corporate Control: The Scientific Evidence*, J. FIN. ECON. 12, 13, table 3 (Apr. 1983). Of course, the proper premium (or discount for non-control) would depend on the size of the financial interest and the magnitude of influence and control the shareholder otherwise would have.

[23] The IRS discounts apparently often fall in the 20–40% range. *See* Lynn Asinof, *Family Limited Partnerships Can Be Dysfunctional*, WALL ST. J., Apr. 26, 1996, at C1.

[24] Of course, analysis of concentration and market shares is only one step in the Merger Guidelines analytic process. A full analysis also would involve analysis of entry and repositioning, competitive effects factors, and efficiencies.

on a different rationale for the possible inability to capture benefits. If the acquiring firm is unable to control the target's use of its profits and potentially recapture its fair share of the higher profits it creates, the acquiring firm's incentives to sacrifice its profits in order to increase the profits of the target may be dampened somewhat. Where the seriousness of this problem can be demonstrated with credible evidence, the MHHIs and PPIs can be adjusted downward accordingly.

However, it is important to recognize that this factor does not eliminate the acquiring firm's incentives to pull its competitive punches, but only dampens them to some extent. This analysis would not justify an exemption from Section 7 or a dramatic increase in antitrust permissiveness towards passive minority financial interests.[25] Finally, of course, this factor is greatly weakened or eliminated altogether when the acquiring firm also has control or influence over the target.

This raises the question of when and how the acquiring firm can credibly demonstrate that this inability to capture benefits is significant. In this regard, evidence that the acquiring firm can exert no influence over the target clearly would be relevant. Evidence that the target has a poor investment record also would be relevant. It also would be relevant if the financial interest were not acquired directly and actively, but rather were inherited or obtained passively, say as part of a larger transaction. If the investment were actively obtained, there is less reason to think that the acquired firm so fears the loss of its investment that it would forgo otherwise profitable actions to benefit the target. To the contrary, this real-world factor would provide credible evidence that the acquiring firm had enough trust in the management of the target to seek out and acquire the original investment.

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[25] In this regard, the Competitor Collaboration Guidelines recently issued by DOJ and FTC recognize that passive financial interests can raise competitive concerns. *See* Federal Trade Commission and U.S. Department of Justice, Antitrust Guidelines for Collaborations Among Competitors § 3.34(c) (2000), *available at* http://www.ftc.gov/os/2000/04/ftcdojguidelines.pdf.